

Geosci. Model Dev. Discuss., referee comment RC2
<https://doi.org/10.5194/gmd-2022-205-RC2>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on gmd-2022-205

Anonymous Referee #2

Referee comment on "Evaluation of native Earth system model output with ESMValTool v2.6.0" by Manuel Schlund et al., Geosci. Model Dev. Discuss.,
<https://doi.org/10.5194/gmd-2022-205-RC2>, 2022

The submitted article by Schlund et al provides details and examples on how ESMValTool have been further developed in order to read raw output from a number of Earth System Models. The structure provided also give a framework on how to extend these capabilities to other models. Even though the article is very technical adding and describing these capabilities are an important step in order to use the tool efficiently, so I think it may be accepted in GMD. The article are however a bit unclear on the first step of the process or whether there are some initial steps prior to the process not covered by the article, e.g time averaging, preprocessing, e.g. for EC-Earth. I think it might be useful if the authors provide a even more specific overview of the steps needed, i.e. in a model table. I presume 4-5 cells /categories would be enough for the purpose. E.g:
Preprocessing; Create facets; Run preprocessors;

On a related note, while it is good that the authors show the capabilities by adding examples for all the models I also think it is a bit unclear whether this means that the process need to be different for all the models all the way until the plotting scripts. Or are there a point e.g. after the `config_developer` where the formats of the different model are equivalent and that later procedures/scripts can be used for all models producing the same type of plots as for the model specific example.

This is in particular important for section 4 and 5. While the models are clearly separated in section 2 this is not the case for section 4 and 5. Given that any plots may have been produced with any of the models this is fine. If not I think there should be a more clear separation between the models.

Minor issues:

Line 62. Typo: "rawoutput" --> raw output

Line 90 I presume at least some of the intermediate products be stored. Preprocessing is often heavy for long timeseries so you want to reduce the runtime. Also mentioned at line 413, but can be included already here.

line 238 Oceanic model --> ocean model

line 329. It is often very useful to compare the experiment with a control version. Is this easily done e.g using earlier stored fields?

Page 16, figure 6. May be useful also to show if you can provide simple statistics, e.g. global averages ? bias rmse?

line 403: Any plans for developing more advanced regridding?